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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,752	06/10/2005	Reinhold Schneider	37934-217269	1632

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EXAMINER	
STAFIRA, MICHAEL PATRICK	
ART UNIT	**PAPER NUMBER**
2886	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,752	SCHNEIDER, REINHOLD	
	Examiner	Art Unit	
	Michael P. Stafira	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/10/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

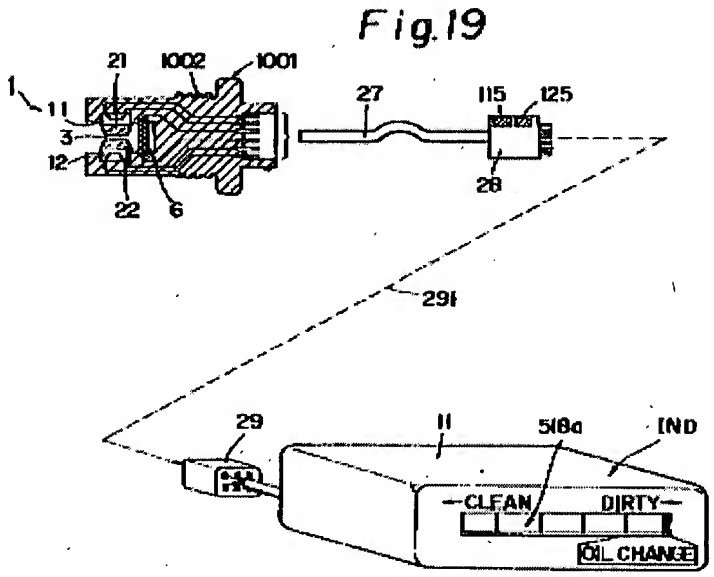
1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-10, 14-21, 23, 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya et al. ('509).

Claim 1

Kamiya et al. ('509) discloses at least one measuring head with a transmitting unit (Fig. 19, Ref. 1), provided with at least one semiconductor transmitting element (Fig. 19, Ref. 11) which emits visible light rays, as well as a receiving unit (Fig. 19, Ref. 1) provided with at least one semiconductor receiving element (Fig. 19, Ref. 12) onto which the portion of transmitted light rays is guided which penetrates an absorption section filled with a liquid or gaseous medium (See Abstract), further comprising an evaluation unit (Fig. 19, Ref. H) which is connected via electrical supply lines (Fig. 19, Ref. 27) to the measuring head and is used for evaluating the receiving signals presents at the output of the semiconductor receiving element (Fig. 19, Ref. 1) for determining the particle concentration (Col. 4-5, lines 60-13).



Claim 3

Kamiya et al. ('509) discloses the measuring head (Fig. 19, Ref. 1), or each measuring head, is embodied as immersion sensor module having a transmitting unit (Fig. 19, Ref. 11) and a receiving unit (Fig. 19, Ref. 12) which are encapsulated so as to be impermeable to liquid (See Fig. 14).

Claim 4

Kamiya et al. ('509) discloses the transmitting unit (Fig. 19, Ref. 11) and the receiving unit (Fig. 19, Ref. 12) are encapsulated with light-permeable materials, at least in the region of the optically active surfaces for the semiconductor transmitting element and the semiconductor receiving element (Fig. 19, Ref. 21, 22)(Col. 6, lines 37-46).

Claim 5

Kamiya et al. ('509) discloses the light-permeable materials are glass (Col. 6, lines 37-41).

Claim 6

The reference of Kamiya et al. ('509) further discloses the transmitting unit (Fig. 19, Ref. 11) and the receiving unit (Fig. 19, Ref. 12) are attached to a joint holder (See Fig. 19) for defining the absorption section.

Claim 7

Kamiya et al. ('509) discloses the transmitting unit (Fig. 19, Ref. 11) and the receiving unit (Fig. 19, Ref. 12) can be secured adjustably in different positions on the holder (Col. 5, lines 14-33).

Claim 8

Kamiya et al. ('509) further discloses that a cell (Fig. 14, Ref. 416) filled with a liquid or gaseous medium is provided to form the absorption section, wherein the transmitting unit (Fig. 19, Ref. 11) and the receiving unit (Fig. 19, Ref. 12) are arranged on the external surfaces of this cell (Fig. 19, Ref. 416).

Claim 9

The reference of Kamiya et al. ('509) further discloses the cell is a flow-through cell (See Fig. 13a).

Claim 10

Kamiya et al. ('509) discloses the semiconductor transmitting element (Fig. 19, Ref. 11) is a light-emitting diode (Col. 5, line 38).

Claim 14

The reference of Kamiya et al. ('509) further discloses that a monochromatic illuminator, a filter, a gap-type aperture, or a transmitting optic (Fig. 19, Ref. 21) are installed downstream of

the semiconductor transmitting element (Fig. 19, Ref. 11), in the beam path for the transmitted light rays (See Fig. 19).

Claim 15

Kamiya et al. ('509) further discloses the semiconductor transmitting element (Fig. 19, Ref. 11) is supplied with a constant direct voltage (See Fig. 15).

Claim 16

The reference of Kamiya et al. ('509) further discloses that the semiconductor receiving element (Fig. 19, Ref. 12) is a photodiode (Col. 5, lines 38-39).

Claim 17

Kamiya et al. ('509) further discloses the semiconductor receiving element (Fig. 19, Ref. 12) is supplied with a constant direct voltage (See Fig. 15).

Claim 18

Kamiya et al. ('509) further discloses in that respectively one voltage stabilizer (Fig. 15, Ref. 521, 522) and one protective resistor (See Fig. 15) are provided for stabilizing the direct voltage supplied to the semiconductor transmitting element (Fig. 15, Ref. 11) and the semiconductor receiving element (Fig. 15, Ref. 12).

Claim 19

Kamiya et al. ('509) discloses a thermistor component is additionally connected to the semiconductor transmitting element (Fig. 15, Ref. 11) for the temperature compensation of the transmitting signals and/or to the semiconductor receiving element (Fig. 15, Ref. 12) for the temperature compensation of the receiving signals (Col. 8-9, lines 51-7).

Claim 20

Kamiya et al. ('509) further discloses that a software module is provided in the evaluation unit (Fig. 19, Ref. H) for the temperature compensation of the receiving signals (Col. 11-12, lines 39-21).

Claim 21

The reference of Kamiya et al. ('509) further discloses the evaluation unit (Fig. 19, Ref. H) is provided with an analog or digital display unit for displaying the receiving signals (Fig. 19, Ref. 518a).

Claim 23

Kamiya et al. ('509) discloses realizing reference measurements with known particle concentrations during a calibration operation, using reference media arranged in the absorption section, for determining a sensor-specific and dye-specific and/or particle-specific reference extinction value Ecal; subsequently determining extinction values Emeas that form actual measuring variables for liquid media arranged in the absorption section; and, following this, determining the particle concentration in the respective liquid medium by relating the measured extinction value Emeas to the reference extinction value Ecal (Col. 4-5, lines 40-33).

Claim 27

Kamiya et al. ('509) discloses determining the soot content and/or the metal abrasion content in engine oils (Col. 1, lines 14-25).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 11-13, 22, 24-26, 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya et al. ('509).

Claim 2

Kamiya et al. ('509) discloses the claimed inventions except for several measuring heads are connected to a joint evaluation unit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Kamiya et al. ('509) with the several measuring heads since it was well known in the art that using multiple measuring heads increases the area in which can be monitored, therefore increasing the accuracy and reliability of the measured data.

Claims 11-13

Kamiya et al. ('509) discloses the claimed invention except for the transmitting element has a wavelength between 400 nm to 700 nm or the spectral bandwidth is less than 100 nm or has a wavelength range of 470 nm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Kamiya et al. ('509) with the different wavelength options disclosed above since it was well known in the art that using certain wavelengths having better absorption values for different materials, therefore using these wavelengths increase the sensitivity of the measurement.

Claim 22

Kamiya et al. ('509) discloses the claimed invention except for a computer unit for reading signals from an analog/digital converter. It would have been obvious to one having

ordinary skill in the art at the time the invention was made to combine Kamiya et al. ('509) with computer unit since it was well known in the art that using a computer unit for measuring signals reduces the amount of electrical components needed on a circuit board, therefore, making the decision unit smaller and compact.

Claims 24-26

Kamiya et al. ('509) discloses the claimed invention except for extinction value or the equation etc.... It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Kamiya et al. ('509) with extinction value etc... since it was well known in the art that using mathematical computations increases the efficiency of the processing of calculations, therefore increasing the speed as to which measurement are made in the system.

Claims 28-30

Kamiya et al. ('509) discloses the claimed invention except for the optical sensor is used for determining pollutants in gases of vehicles or concentrations in exhaust air or pollutants in waste water. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Kamiya et al. ('509) with the different types of uses disclosed above since it was well known in the art that using a device in different environments increases the marketability of the sensor, therefore possibility increasing the sales of the unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael P. Stafira
Primary Examiner
Art Unit 2886

June 15, 2007